The 'black dog': depression in old age

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Winston Churchill was accompanied in life by his 'black dog' - not a loved pet but a lurking demon that clung to his side, repeatedly dragged him into dark moods (Yudofsky, 2012). Depression is a common mental disorder, particularly in old age, when it often presents as a persistent, seemingly unshakeable state that seriously impairs quality of life. In older people depression is under-detected, and thus under-treated. This may be partly due to erroneous ideas in society and among health and social care workers about low mood as an inevitable response to mental, physical and social decline (McCrae *et al*, 2005). Yet depression is a treatable illness: there is no need for people to suffer in silence.

Definition

Clinical depression is a quantitative rather than qualitative entity, diagnosed using standardised rating scales based on international diagnostic classification systems. Major depressive disorder is defined in the *Diagnostic & Statistical Manual of Mental Disorders* (*DSM-V*) as a state of sadness or anhedonia lasting at least two weeks, with a total of at least five symptoms from a list comprising sleep problems, appetite changes, psychomotor retardation or agitation, fatigue, feelings of worthlessness or guilt, inattentiveness and suicidal ideation (American Psychiatric Association, 2013). Less severe forms are minor depressive disorder and dysthymia. Another *DSM-V* condition, of particular relevance to older people, is adjustment disorder with depressed mood (e.g. following bereavement). Meanwhile the *International Classification of Diseases* (World Health Organisation, 2010) has three levels of depressive disorder (mild, moderate and severe).

Incidence

Depression is the most common mental health problem in old age[1]. Epidemiological estimates vary widely, due to differences in age brackets, national and cultural context, and diagnostic criteria applied by clinicians or researchers. Studies typically report prevalence of around 5% for major depressive disorder (Blazer, 2003) and upwards of 10% for minor depressive disorder (Polyakova *et al*, 2014). Older women appear more susceptible to depression, one community cohort study (Barry *et al*, 2008) finding a significantly higher rate compared to men over a 6-year period.

[1] In this article, old age is defined as age 65 upwards, and late life as 85 years and over

Causes

Depression in old age has a complex aetiology, with myriad primary and secondary causes. Although older people may have various adversities in their health, activity and social life, these are not determinants of depressive illness. As an existential phenomenon, depression is a uniquely individual response. Many older people retain a high level of satisfaction despite illness, disability or loss. Resilience, defined by Windle and colleagues (2008) as a combination of self-esteem, competence and control, is necessary in facing the challenges of ageing. In psychoanalyst Erik Erikson's theory of the human life cycle, there are eight stages of life each presenting a crisis, with conflict between harmonious and disruptive forces. In the last stage the conflict is between ego integrity and despair. Older people tend to review their life in terms of success or failure. If deriving satisfaction from accomplishments in life, the person will approach end of life in contentment and peace; someone reflecting only on difficulties and disappointments may feel that life was wasted or futile. In successful resolution, emotional and cognitive integration amounts to wisdom, which Erikson (1980) defined as an informed and detached view of life and death. Older people who do not adapt to their changing role are more prone to depression.

Lack of purpose and of confiding relationships are known factors in depression at any age. While incidence in women changes little from younger adulthood, depression increases in men between ages of 60 and 80, which may be attributed to loss of occupational and financial status (Barefoot *et al*, 2001). Social activity may increase after retirement, but tends to decline in later old age. In disengagement theory, withdrawal from social contact is a normal ageing process (Havighurst *et al*, 1968), and while surveys show that socially active older people are less likely to experience physical and mental health problems, many senior citizens lead comfortable lives at home with minimal social interaction. Nonetheless, loneliness can be a serious problem for a socially-isolated older person. Older people are at risk after loss of a spouse, with bereavement sometimes leading to prolonged grief, insecurity and loneliness (until the latest revision of the *DSM*, bereavement was an excluding factor in diagnosis of depression). Risk of depression increases when a person moves to a care home. A major British study (McDougall *et al*, 2007) showed considerably higher prevalence of depression in institutional settings: 27% compared to 9% of older people living in the community. Probable factors are physical disability, limited autonomy and reduced opportunities for meaningful interaction and activity. Depression is poorly detected in care homes (Bagley *et al*, 2000).

Ageing entails a gradual process of bodily change, which is apparent in all systems, influenced by both nature and nurture. Older people are more prone to physical illness, with more likelihood of this becoming chronic. Depression is disproportionately common in people with diabetes mellitus, chronic respiratory disease and other enduring conditions (Katon, 1987). Mobility may be impaired by

cardiovascular, endocrine, musculoskeletal or respiratory disorders, and there are tendencies for polymorbidity and polypharmacy as age advances. Fatigue, loss of appetite and sleep disturbance may be the result of physical illness or side effects of medication rather than low mood, so diagnostic assessment should exclude possible pathological causes of apparent changes in behaviour or mental state.

Depression is highly correlated with neurological conditions related to ageing. Vascular changes may reduce oxygen flow, which could contribute to the stereotypical character of an older person who becomes inflexible, less responsive and forgetful. Despite gradual loss of brain cells in ageing, and intracellular changes that retard neurotransmission, the impact on mental functioning is debatable. Intellectual decline has been refuted by cohort studies (e.g. Owens, 1966), and cognitive deficits are insignificant in healthy older people.

The relationship between depression and dementia is bi-directional. A review by Polyakova and colleagues (2014) showed 20% frequency of minor depression in people with mild cognitive impairment. Depression has high prevalence in Alzheimer's disease, which may be due to pathological changes including imbalance in neurotransmitters, inflammatory action and vascular occlusion (Chi *et al*, 2014). A systematic review (Diniz *et al*, 2013) showed that depression substantially raises the risk of both vascular and Alzheimer's types of dementia (odds ratios of 2.52 and 1.65 respectively, both $P < 0.001$). This suggests that preventing depression may reduce the incidence of dementia. A study by Lee and colleagues (2012) showed that depressive symptoms in people with mild cognitive impairment predict greater atrophy in brain regions related to Alzheimer's pathology. Some experts consider depression as a prodromal condition of dementia (Bennett & Thomas, 2014).

Other neurological conditions are linked to depression. A review showed that depression occurs in as many as 40% of people with Parkinson's disease (Cummings, 1992); Remy and colleagues (2005) attributed this to declining innervation of dopamine and noradrenaline in the limbic system, both of these neurotransmitters having a major influence on mood. Depression also frequently arises in people with brain tumours, one study finding depression in 22% of patients six months after surgery for high-grade glioma (Litofsky *et al*, 2004). Cases have been reported of a brain tumour being mistaken for depression (Dautricourt *et al*, 2015), causing potentially deadly delay in treatment. This emphasises the need for comprehensive physical and neuropsychiatric assessment.

Presentation and prognosis

Depression often has a different clinical presentation in older people. Low mood may not be readily apparent; other signs include irritability, apathy, bodily complaints of dubious basis, and neglect of self-care. It sometimes has a severe form in older people, with delusions and a profound, nihilistic sense of physical and mental deterioration. Psychomotor retardation or agitation may be prominent features. The extent of overlap of anxiety and depression was shown by the EURODEP project, which included 14200 community-dwelling older people in seven European countries: 32% of non-depressed persons had anxiety symptoms, compared to 67% in those with sub-threshold depression and 82% in those at case level (Braam *et al*, 2014). Several symptoms of anxiety and depression are shared, such as insomnia, and although these are distinct diagnostic categories, in older people their high comorbidity suggests expression of the same distress.

While depression is normally a self-remitting condition, it is more likely to become chronic in old age if untreated. In a cohort study, Harris and colleagues (2006) found that 61% of older patients who were depressed at baseline remained so two years later. A depressive episode may have profound and lasting impact on an older person. Staying at home and social withdrawal may cause isolation, while loss of interest in normal activities and consequent reduction in exercise may worsen physical health. Intimate relationships may be harmed by depression, which may cause stress for a spouse or other family carer, just at the time when the depressed person needs support most A sense of worthlessness and lack of purpose in life may lead to an older person becoming stuck with a narrow, pessimistic outlook. If this perseveres, suicidal ideation may arise. According to 2014 figures in the UK (Office for National Statistics, 2016), the rate of suicide is highest in ages 45-49 (784 deaths, 16.8 per 100000), falling before it gradually increases in old age.[2]

Table 1: Suicide cases (and rates per 100000) in older people in UK, 2014 (Office for National Statistics, 2016)

Sex	Age				
	65-69	70-74	75-79	80-84	85+
Male	211 (12.2)	161 (12.9)	128 (13.1)	95 (14.3)	88 (17.1)
Female	79 (4.3)	63 (4.6)	46 (4.0)	37 (4.1)	56 (5.7)
Total	290 (8.1)	224 (8.5)	174 (8.1)	132 (8.4)	144 (9.6)

[2] As these figures only include suicides registered in the UK, people travelling abroad for medically-assisted suicide (e.g. Dignitas) are missing.

Assessment

Detecting depression in older people is problematic. Help-seeking behaviour is limited in many older people, with gender and ethnicity known factors. As in younger adults, older men report mental health problems less frequently than do women, possibly due to stoicism, denial and lack of emotional articulacy. Pronounced stigma towards mental health problems exists in some migrant communities (Marwaha & Livingston, 2002). Compared with older white people, black Caribbean and south Asian people are less inclined to consult a doctor for depression (Lawrence *et al*, 2006). Depression is often masked by somatisation.

Generic screening instruments for depression are not always appropriate for older people, for various reasons. The multiple choice format of established instruments such as the Beck Depression Inventory (Beck *et al*, 1961) is sometimes found confusing or irksome by older people with low mood. Furthermore, as many older people have health conditions that produce symptoms similar to those of depression, validity of instruments becomes dubious. In response to these challenges, the Geriatric Depression Scale was devised. Focusing on cognitive patterns rather than physical symptoms, this instrument is relatively simple to use with older people. The short version has fifteen items, to be answered 'yes' or 'no' (table 2). A score of 7 or over indicates a depressive state, requiring further investigation.

Table 2: Geriatric Depression Scale (Sheikh & Yesavage, 1986).

1. Are you basically satisfied with your life?
2. Have you dropped many of your activities and interests?
3. Do you feel that your life is empty?
4. Do you often get bored?
5. Are you in good spirits most of the time?
6. Are you afraid that something bad is going to happen to you?
7. Do you feel happy most of the time?
8. Do you often feel helpless?
9. Do you prefer to stay at home, rather than going out and doing new things?
10. Do you feel you have more problems with memory than most?
11. Do you feel it is wonderful to be alive?
12. Do you feel pretty worthless the way you are now?
13. Do you feel full of energy?
14. Do you feel that your situation is hopeless?
15. Do you think that most people are better off than you?

It should be acknowledged that standardised assessment criteria cannot present a full picture of a person's feeling of dejection, misery or grief. Furthermore, mental health may be a taboo topic in older people, particularly in some minority cultures. In assessing older people, terminology should be used sensitively. For example, it may be better to begin with terms such as 'sad' or 'feeling low' rather than 'depression'. Additional difficulties arise in detecting depression in people with cognitive impairment. Sometimes a depressive episode may be mistaken for dementia, and a pseudo-dementia syndrome may develop from severe depression (Post, 1975). Due to overlap in symptoms, the Cornell Scale for Depression in Dementia (Alexopoulos *et al*, 1988) is recommended for assessing mood in a person already diagnosed with dementia.

Treatment

Biological treatment is central to psychiatry. Since the 1960s neurotransmission systems have been the focus of the aetiology and treatment of mental disorders. Neurotransmitters are chemical messengers released and received by neurons at the synapse, and mood and behaviour may be much influenced by disruption to this process. Serotonin is implicated in problems with sleep, appetite, libido, mood and anxiety - all common symptoms of depression. Use of antidepressants has steadily risen since Prozac (fluoxetine), the first selective serotonin re-uptake inhibitor (SSRI), was launched in 1988. SSRIs are a primary treatment for depression at any age, having good effectiveness (National Institute for Health & Clinical Excellence, 2009), although evidence may be exaggerated by publication bias (Turner *et al*, 2008). Concerns have been raised about the escalating use of antidepressants, with 58 million prescriptions in England in the year to March 2015 (*Daily Telegraph*, 11 February 2016).

Older people differ from younger adults in responding to drug treatment. Therapeutic action is often slower, while older patients tend to have more adverse effects due to altered absorption and metabolism, comorbidity and concomitant medication. In its treatment guidelines, the National Institute for Health & Clinical Excellence in the UK (NICE, 2009) recommended that antidepressant use in older people should follow similar principles as in younger adults, but with special regard to interactions and side-effects. Antidepressant drugs are normally introduced on a low dose with gradual titration. The older person and family should be encouraged to report any adverse events to a practitioner. Adherence may be a problem; this may be due to forgetfulness, actual or perceived side-effects, or a general reluctance to take medication.

SSRIs are the most common choice of antidepressant treatment in older people, supported by evidence of effectiveness and tolerance (Kok *et al*, 2012). Fluoxetine is not recommended for older

people due to its longer half-life and prolonged side-effects (Wiess, 2012). Safer SSRIs for older people are citalopram and sertraline. While SSRIs produce a wide range of side-effects including headache, visual impairment, nausea and dry mouth, these are mostly transient. As SSRIs act only on serotonin, and not on other neurotransmitters with influence on mood, drugs of broader action have been introduced. Venlafaxine is a norepinephrine and serotonin re-uptake inhibitor (SNRI), which is at least as effective as SSRIs with similar tolerance, although it tends to increase blood pressure. Mirtazapine is a noradrenergic and specific serotonergic antidepressant (NASSA) with anxiolytic effects; compared to other antidepressant drugs it appears to be more effective, but it has sedative effects. Interconnection of neurotransmitter systems may explain better rates of remission achieved by drugs with complementary mechanisms of action (Blier & el Mansari, 2013).

Tricyclic antidepressant drugs (TCA) such as amitriptyline are indicated for agitated or psychotic depression, but they inhibit acetylcholine transmission. Such anticholinergic effects may cause severe medical complications in older people, and compound medical conditions such as cardiovascular disease. However, TCAs are sometimes effective in cases resistant to SSRIs, and this class of drug continues to be used widely in the older population. Desipramine has relatively less anticholinergic effects than other TCAs (Wiess, 2012). It should be acknowledged that anticholinergic effects also arise with SSRIs, particularly paroxetine, which is generally avoided in older people for this reason (Wiess, 2012).

A systematic review of 51 randomised controlled trials of antidepressant drugs in older people (Kok *et al*, 2012) showed no differences between classes of drug, but there was considerably lower attrition in trials of SSRIs, which was attributed to participants experiencing fewer side-effects. A large cohort study (Coupland *et al*, 2011) of adverse effects of antidepressant treatment in older people, as recorded in primary care data, found that all types of drug raised the risk of stroke, epileptic seizures, fractures and self-harm compared to periods of no treatment. This study found that SSRIs correlated more with adverse events than did tricyclic antidepressants, which may have been due to cautious dosing with the latter class. Gastrointestinal bleeding is a risk, exacerbated by the anti-inflammatory medication often taken by older people (De Abajo *et al*, 2008). Due to changes in renal functioning in old age, antidepressant drug treatment may lead to hyponatraemia, resulting from excessive antidiuretic hormone secretion. This syndrome is found in around 10% of older people taking antidepressant drugs, and is particularly common in SSRIs and venlafaxine (Wiess, 2012). Sodium level should be checked routinely one month after treatment begins. Hyponatraemia disappears soon after discontinuation of treatment.

Table 3: Common drug treatments for depression

Drug	*Class*	*Average daily dose (mg)*	*Side-effects*
Sertraline	SSRI	50-150	Nausea, dry mouth, insomnia, agitation, diarrhoea, sweating, hyponatraemia
Citalopram	SSRI	20-40	As above
Venlafaxine	SNRI	75-225	As above; also increase in blood pressure, weakness, dizziness
Mirtazapine	NASSA	30-45	Constipation, dry mouth, weight gain, sedation, weakness, dizziness
Desipramine	TCA	50-150	Similar to other drugs but more marked; additionally anticholinergic effects, weight gain and cardiovascular effects (arrhythmia, postural hypotension)

Electroconvulsive therapy (ECT) is a valuable treatment for severe depression, which may be impenetrable to antidepressant drugs. It appears to work as well in older people as in younger adults, with a recovery rate of around 80%. In the past, ECT was avoided in old age due to cardiovascular risks, but there is now greater confidence in its tolerance. Although concerns have been expressed about excessive use in older people (Social Care Institute for Excellence, 2006), ECT is indicated for drug-resistant depression, or severe cases with food refusal, delusions or suicidal ideation. Despite cardiovascular and other contraindications, the balance of risk may be weighed in favour of ECT as a life-saving intervention. Short-term amnesia is common, and there should be a gap of at least three days between treatments to minimise cognitive dysfunction. ECT has a high relapse rate and it cannot be used as maintenance therapy.

Newer electrical treatments are emerging. Repetitive transcranial magnetic stimulation (rTMS) entails generation of a focal electromagnetic field by a coil positioned over the scalp, with a course of 20 to 40 sessions. While rTMS does not require anaesthesia and has insignificant cognitive side effects, depressed older people appear to be less responsive than younger adults (Pallanti *et al*, 2012). Trigeminal nerve stimulation, initially devised by deGiogio and colleagues (2011) as a treatment for drug-resistant epilepsy, was found to have mood-enhancing effect, and was licensed by the European Union in 2012 for treating severe depression. The device is fitted to the forehead during sleep, with electrodes that trigger sensory nerve impulses, activating affective areas of the brain. Results are promising, with improvement in cases that failed to respond to drugs (Cook *et al*, 2013). In the near future, chemical treatment of depression may be superseded.

Psychological interventions are also considered to be a primary treatment for depression, often alongside drug treatment. However, age discrimination has restricted access of older people to psychological therapies (Hepple, 2004). This is partly due to myths as described by Laidlaw and colleagues (2003): -

- You can't teach an old dog new tricks
- Getting old must be terrible: depression is inevitable
- Older people do not want psychotherapy and cannot deal with abstract formulations
- Poor cost-benefit ratio: therapeutic resources are best expended on younger people

Life history is important in initial assessment, but psychotherapeutic work with older people is orientated towards current problems. The humanistic psychology of Carl Rogers (1951/1997) emphasises life-long personal growth, rather than continually delving into the past as in psychoanalysis, but the cognitive school is now dominant in psychology, partly because it has produced evidence-based treatments. Depression is explained as the result of distorted thought patterns, which can be corrected by cognitive behaviour therapy (CBT). A challenge in CBT is a tendency for older people to conflate thoughts and feelings. The therapist encourages the person to examine the evidence for negative thought patterns, and to understand how automatic but irrational beliefs affect emotions and behaviour. The objective of CBT is to enable the person to recognise and overcome negative cognition, developing coping strategies and resilience.

A meta-analysis of 44 studies (Cuijpers *et al*, 2014) found moderate to high effectiveness for a variety of psychological treatments for older people, with best outcomes for CBT and problem-solving therapy. However, many studies were of low quality, and there is also a risk of publication bias. Participants in these studies were not representative of older people with major depressive disorder, being of younger old age, and their eligibility including sub-threshold depression or determined by self-report questionnaire. Further research is needed on psychological therapies in the specific context of mental health problems in later life.

Care management

A stepped care approach is useful in assessing and treating depression in older people. The first step is assessment in primary care. Organic causes must be excluded, including blood test for urea and electrolytes, liver function, thyroid function, vitamin B12 and folate. Depending on clinical presentation, further testing may include fasting glucose and bone profile. Depression may then be assessed using a standardised screening instrument. Discussion with the patient will consider history

of depressive illness, and the impact and duration of symptoms. At step 2 is low-intensity psychosocial intervention, which may entail guided self-help, a physical activity programme, or to facilitate the patient's engagement in local community resources, a befriending service or peer support group. Antidepressants may be prescribed, but not routinely. If symptoms persist, the patient is treated at step 3. A combination of antidepressants may be tried, and the patient may be directed to high-intensity psychological intervention, normally in the form of CBT or a related form of talking therapy. If depression becomes severe, and if the patient is endangered by self-neglect or suicidal thoughts, urgent mental health service input is required. A crisis team should be contacted, or the patient should be taken to a hospital emergency department. Inpatient treatment may be necessary, with treatment by medication, ECT and psychosocial therapies. On discharge, recurrence of depression is less likely if regular support is provided by a practitioner such as a community nurse (Baldwin *et al*, 2003).

Conclusion

As a very common and disabling condition in older people, depression requires prompt detection and treatment. As depression is often masked, either by other symptoms or by reluctance to discuss mental health problems, practitioners need to forge a good rapport with the older person. A constructive partnership, built on honesty and trust, will inform a plan of care and treatment to facilitate recovery, deploying a range of social, psychological and (if appropriate) bio9logical interventions. The Black Dog can be chased from the door.

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Information sources for patients and carers

AgeUK: *Help and Support with Depression*. Describes depression and explains the purpose and value of ttalking therapies. www.ageuk.org.uk/health-wellbeing/doctors-hospitals/talking-treatments-take-the-first-step/

Royal College of Psychiatrists. *Depression in Older Adults.* Leaflet for people aged over 65 who are depressed, with advice on support and treatment. Also useful for family carers. www.rcpsych.ac.uk/healthadvice/problemsdisorders/depressioninolderadults.aspx